**Pre-Calculus**

**1. 2 Notes**

**Day 2**

1. **Using slope**
2. The slope-intercept form of a line: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

m = \_\_\_\_\_\_\_\_\_\_

y-intercept = \_\_\_\_\_\_\_\_\_\_\_

1. A vertical line has equation \_\_\_\_\_\_\_\_.
2. A horizontal line has equation \_\_\_\_\_\_\_\_.
3. The slope of a vertical line is \_\_\_\_\_\_\_\_\_\_\_\_.
4. The slope of a horizontal line is \_\_\_\_\_\_\_\_\_\_\_.

**Ex. 1:** Sketch these graphs

1. y = 2x + 1 b) y = 2 c) x + y = 2

In real life problems, slope is either a \_\_\_\_\_\_\_\_ or a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

If x and y-axes have the same unit of measure the slope is a \_\_\_\_\_\_\_\_\_\_.

If axes have different units of measure, then the slope is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Ex. 2:** Using slope as a ratio; page 14

**Ex. 3:** Using slope as a rate of change; page 14

1. **Finding the slope of a line**

**Definition: The slope, denoted “m” of the non-vertical line through (x1, y1) and (x2, y2) is**

**, where x2 ≠ x1.**

**Note: m =**

**Ex. 4:** Find the slope.

1. (-2, 0) & (3, 1)
2. (-1, -2) & (-2, 4)
3. (0, 4) & (3, 4)
4. (3, 2) & (3, -6)
5. **Writing linear equations**

* Take the slope formula and cross multiply.
* This is the point-slope form of a line.

**Ex. 5:** Find the equation of a line if m = 3 and it passes through (1, -2).

**Ex. 6:** Find the equation of the line given (1, 3) and (-2, -5).

**Summary of Linear Equations: (Use your notes to complete the chart.)**

|  |  |
| --- | --- |
| 1. General form: |  |
| 1. Vertical line: |  |
| 1. Horizontal line: |  |
| 1. Slope-intercept form: |  |
| 1. Point-slope form: |  |

1. **Parallel and perpendicular lines**

* Assuming lines are NOT vertical:
  + - 1. Parallel lines have \_\_\_\_\_\_\_\_ slopes.
      2. Perpendicular lines have slopes that are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Ex. 7:** Find the equation of a line passing through (2, -1) and is…

1. || to 2x – 3y = 5
2. To 2x – 3y = 5
3. **Application**

**Ex. 8:**  page 20